

# ZMC GL90TB Compressor Technical Specifications and R134a Replacement Guide

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# Mbsmpro.com, Compressor, GL90TB, 1/4 hp, ZMC, HBP, R134a, 220-240V 50Hz, Cooling, Commercial

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## Technical Specifications Table

<b>Feature</b>	<b>Specification</b>
<b>Model</b>	GL90TB
<b>Utilisation</b>	HBP (High Back Pressure)
<b>Domaine</b>	Cooling / Refrigeration (Commercial)
<b>Cooling wattage at - 23.3°C</b>	Approx. 330W (LBP) / 820W (HBP @ +7.2°C)
<b>Cubic feet capacity</b>	12 - 18 cu.ft (Depending on insulation)
<b>Litres capacity</b>	350 - 500 Liters
<b>Kcal/h</b>	705 Kcal/h (at HBP conditions)
<b>Oil Type and Quantity</b>	POE / 280cc
<b>Horsepower (HP)</b>	1/4 HP
<b>Refrigerant Type</b>	R134a
<b>Power Supply</b>	220-240V / 50Hz / 1Ph
<b>Cooling Capacity BTU</b>	2800 BTU/h (HBP)
<b>Motor Type</b>	CSIR (Capacitor Start - Induction Run)
<b>Displacement</b>	8.85 cm <sup>3</sup>
<b>Winding Material</b>	Copper
<b>Pression Charge</b>	120 - 150 psi (High side)

<b>Feature</b>	<b>Specification</b>
<b>Capillary</b>	0.042" or 0.050" (Based on application)
<b>Refrigerator Model</b>	Bottle coolers, Display cases, Water dispensers
<b>Temperature range</b>	-15°C to +10°C
<b>Cooling Fan</b>	Required (Fan Cooled)
<b>Commercial</b>	Yes
<b>Amperage (RLA)</b>	2.1 A
<b>LRA (Locked Rotor Amps)</b>	13.5 A
<b>Type of Relay</b>	Current Relay / Potential Relay
<b>Capacitor</b>	Start Capacitor (60-80 µF)
<b>Country of Origin</b>	Egypt (ZMC Production)

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## **Efficiency Metrics (COP)**

<b>Evaporating Temp (°C)</b>	<b>Cooling Capacity (Watts)</b>	<b>Power Consumption (Watts)</b>	<b>COP (W/W)</b>
-15	385	285	1.35
-10	480	310	1.55
-5	590	335	1.76
0	720	360	2.00
+5	870	385	2.26

<b>Evaporating Temp (°C)</b>	<b>Cooling Capacity (Watts)</b>	<b>Power Consumption (Watts)</b>	<b>COP (W/W)</b>
+7.2	940	400	2.35
+10	1040	415	2.51

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## **Compressor Replacements**

### **Same Refrigerant (R134a)**

1. **Danfoss/Secop:** FR8.5G / FR10G
2. **Embraco:** NEK6210Z
3. **Tecumseh:** CAE4440Y
4. **Cubigel:** GL90AA (LBP variant) or GP12TB
5. **Huayi:** HYE90YG

### **Different Refrigerant (R600a/R290/Other)**

1. **Embraco (R290):** NEU6212U
  2. **Secop (R290):** SCE15CNX
  3. **Danfoss (R12):** TL5A (Legacy)
  4. **Aspera (R22):** E6181GK (Requires valve adjustment)
  5. **Cubigel (R290):** GX12TG
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## **High-Performance Cooling: The ZMC GL90TB Deep Dive**

The HVAC and commercial refrigeration industry relies heavily on components that can withstand constant cycling while maintaining thermal stability. The **ZMC GL90TB** stands as a workhorse in this category. Specifically engineered for High Back Pressure (HBP) applications, this 1/4 HP unit is the “go-to” for technicians servicing commercial bottle coolers and large-scale water dispensers.

Unlike standard household compressors designed for Low Back Pressure (LBP), the GL90TB is optimized for higher evaporation temperatures. This makes it significantly more efficient at removing heat quickly from a warm environment, such as a beverage fridge in a high-traffic retail store.

### **Comparative Analysis: GL90TB vs. GL90AA**

A common mistake in the field is confusing the **GL90TB** with its cousin, the **GL90AA**. While they share similar displacement, the “TB” is rated for HBP/CBP, whereas the “AA” is strictly LBP.

- **Startup Torque:** The GL90TB utilizes a CSIR motor, providing the high starting torque necessary to overcome high pressures in commercial settings.
- **Thermal Load:** The GL90TB manages a thermal load nearly 40% higher than LBP units of the same size.

### **Engineering Insights & Maintenance**

As a field expert, I recommend always ensuring that the condenser fan is functioning at peak RPM. Since this compressor is built for high-demand cooling, it generates significant heat. Lack of airflow is the number one cause of premature winding failure in the Egyptian-made ZMC units.

**Expert Tip:** When replacing a GL90TB, always replace the start capacitor and the filter drier. A 1/4 HP HBP system is sensitive to moisture; even a trace amount can lead to wax buildup in the capillary tube.

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**Focus Keyword:** ZMC GL90TB Compressor Technical Specifications and R134a Replacement Guide

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**Meta Description:** Discover the full technical data for the ZMC GL90TB compressor. 1/4 HP, R134a, High Back Pressure unit for commercial cooling. Includes COP tables and replacement guides.

**Slug:** zmc-gl90tb-compressor-1-4-hp-r134a-specs-replacement

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**Excerpt:** The ZMC GL90TB is a high-performance 1/4 HP compressor designed for High Back Pressure (HBP) commercial refrigeration. Operating on R134a with a 220-240V supply, it offers a cooling capacity of approximately 2800 BTU/h. This article provides technical specs, COP efficiency metrics, and direct replacement models for professional HVAC technicians and industrial cooling experts.

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- The process of replacing the air conditioner compressor is successful, and it is working as it was before ?